High Resolution SPECT/CT Imaging of Systemic AA-Amyloidosis in Mice

University of Tennessee Graduate School of Medicine (UTGSM)

J. Wall (PI)

- Provide the mouse model of amyloidosis
- Study the *in vitro* reactivity of anti-amyloid antibodies
- Therapy with anti-amyloid antibodies for AA-amyloidosis
- Histological, immunohistochemical, quantification analyses
- Program management

SUBCONTRACT

Oak Ridge National Laboratories (ORNL)

M. Paulus (Co-PI), S. Gleason, S. Kennel

- SPECT/CT instrumentation
- Radiochemistry and radiolabeling
- SPECT/CT image analysis
- Automated amyloid quantitation of SPECT

COLLABORATION

University of Tennessee, Dept. Computer Science

J. Gregor

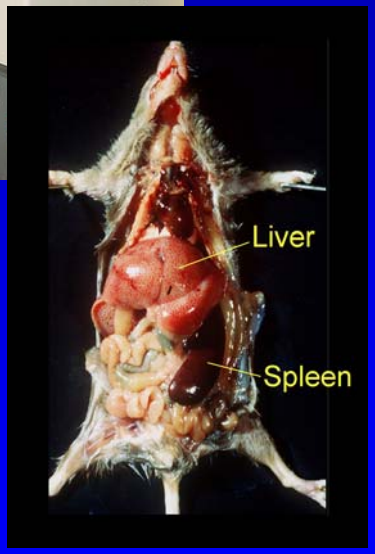
- SPECT/CT image reconstruction
- High performance computing

Royal Free and University Hospital of London

- **P.N. Hawkins**
- Supply of highly purified human serum amyloid P-component

CO-INVESTIGATOR

CONSULTANT



Objectives:

- Develop microSPECT/CT system
- Correlate microSPECT image activity with amyloid burden
- Study progression of amyloidosis in murine models as well as regression in response to novel immunotherapy

NINDS National Institute of Neurological Disorders and Stroke

NIBIB National Institute of Biomedical Imaging and Bioengineering

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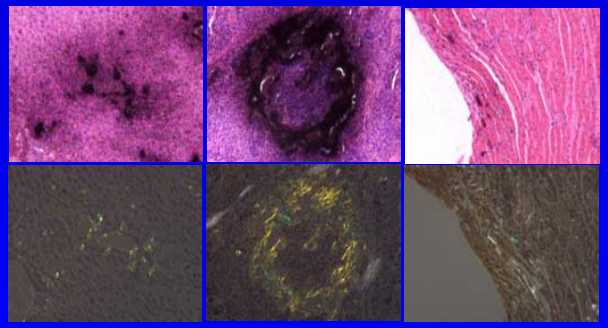
AA in murine spleen

Necropsy

SPECT imaging

Micro-autoradiography



Liver Spleen Heart

Top: autoradiography Bottom: Congo red

^{125}I-SAP SPECT/CT

Normal mouse: high threshold

Amyloid mouse: low threshold

Biodistribution studies

Organ image activity well correlated with percent injected dose per gram.